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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,739	11/13/2003	Petar R. Dvornic	MIC35 P-334	8890

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EXAMINER

CEPERLEY, MARY

ART UNIT	PAPER NUMBER
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1641

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,739

Applicant(s)

DVORNIC ET AL.

Examiner

Mary (Molly) E. Ceperley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1) The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2) Claims 1-12 and 17-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants have extensively amended claim 1 but have failed to point out descriptive support in the specification for the changes made. There does not appear to be any written description in the specification of the claim 1 terms "a cross-linked material", "dendritic polymer blocks intermolecularly cross-linked by a linear moiety having alternating conjugated double and triple bonds" and "covalently bonded directly to the dendritic polymer block...a spacer moiety". In order to avoid written description problems, applicants are advised to use the same language in the claims which also appears in the specification.

3) Claims 1-12 and 15-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) In claim 1 it is unclear what is meant to be included by the terms "cross-linked material", "dendritic polymer blocks" and "a linear moiety". What constitutes a "block" is unclear and the required structure of the "linear moiety" cannot be determined. What is encompassed by the term "material" (other than the recited components) is unclear (see open-ended "comprising" terminology).

b) The term "cross-linked material of claim 13" which is recited in claims 15-18 is inconsistent with the claim 13 term "diacetylene functionalized dendritic compound" which is not "cross-linked".

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c) The "change in fluorescent properties" of claim 30 is inconsistent with the "colorimetric change" recited in claim 25.

4) Claims 13-16 are again provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the corresponding claims of copending Application No. 10/068,378 for the reason stated in paragraph 8) of the December 23, 2004 Office action. Applicants state that they will respond to this rejection in the event that the claims of the 10/068,378 application are patented.

5) Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of a) Lee et al (Polymer Preprints 2002), Sui et al (Colloids and Surfaces A 2000) or Balogh et al (Macromolecules 1999) taken in combination with each of b) Ribi (US 5,622,872), Charych et al (US 6,022,748) or Charych et al (US 6,001,556).

Each of references a) is applied for the reasons set forth in paragraphs 11) and 12) of the December 23, 2004 Office action. Applicants state that the compounds of the instant claims differ from the compounds of the references for the reason that the instant claims are now limited to compounds which contain a "sensory group" (e.g. a member of a biologically active specific binding pair) and the prior art references do not contain such a group.

However, references b) establish that it is well known in the art to attach biomolecules to functional groups of polymerizable dendritic diacetylenic compounds of the type shown in instant claim 13 and references a) for use in specific binding assays. See Ribi: claim 4 and col. 7, lines 30-46; Charych et al ('748): col. 2, lines 50-60; Charych et al ('556): claim 1. Given this fact, it would be obvious to modify the functionalized compounds of references a) to contain biomolecules, as claimed, with the expectation of obtaining similar specific binding agents useful in analytical assays for specific binding pair members.

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6) Claims 1-12 and 17-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over **a)** Sui et al (Colloids and Surfaces A 2000) taken in combination with each of **b)** Ribi (US 5,622,872), Charych et al (US 6,022,748) or Charych et al (US 6,001,556).

Sui et al is applied for the reasons stated in paragraph **13)** of the December 23, 2004 Office action. Applicants state that the compounds of the instant claims differ from the compounds of the references for the reason that the instant claims are now limited to compounds which contain a "sensory group" (e.g. a member of a biologically active specific binding pair) and the prior art references do not contain such a group (Remarks of March 23, 2005, pages 11-13). Other than noting that the Sui et al compounds do not contain "a sensory group", applicants do not dispute the examiner's characterization of the Sui et al compounds as being the same compounds described in the instant claims.

References **b)** establish that it is well known in the art to attach biomolecules to functional groups of polymerizable dendritic diacetylenic compounds of the type shown in the instant claims and reference **a)** for use in specific binding assays. See Ribi: claim 4 and col. 7, lines 30-46; Charych et al ('748): col. 2, lines 50-60; Charych et al ('556): claim 1. Given this fact, it would be obvious to modify the functionalized compounds of reference **a)** to contain biomolecules, as claimed, with the expectation of obtaining similar specific binding agents useful in analytical assays for specific binding pair members. Indeed, Sui et al also state that dendrimers have application as "chemical sensors" and the "end functional groups of dendrimers...are present at the periphery of the molecule" and "become unique starting materials for numerous chemical modifications".

7) Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH

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shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary (Molly) E. Ceperley whose telephone number is (571) 272-0813. The examiner can normally be reached from 8 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le, can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 24, 2005



Mary (Molly) E. Ceperley
Primary Examiner
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